

Macrophyte Biodiversity of Satara Bhosale and Satara Tukum Lakes of Pombhurna Tehsil of Chandrapur District

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Abstract

The present research work was carried out to assess the diversity of aquatic macrophytes in Satara Bhosale and Satara Tukum lakes of Pombhurna tehsil of Chandrapur district during Feb 2016 to Jan 2018. Total 13 species of macrophytes were recorded to be present in Satara Bhosale lake while 15 species of macrophytes were recorded in Satara Tukum lake. The macrophytes were classified into six different types into free floating, submerged floating, Rooted floating, Rooted submerged, rooted emergent and marginal weeds. In the present study more weeds are reported from the Satara Tukum lake i.e. 15 different types of weeds pointing out that it is rich in aquatic weed diversity, as compared to other lake Satara bhosale.

KEYWORDS: Macrophytes, diversity, Satara Bhosale, Satara Tukum, Chandrapur district, weeds .

INTRODUCTION

Aquatic macrophytes also termed as weeds are a part of aquatic vegetation including macroalgae and angiosperms found in aquatic habitat. Aquatic weeds are present in places of marshy land and water logged areas around the globe. The weed biodiversity changes continuously depending on the input supply as well as the nutrients present in the marshy areas. The aquatic weeds are unwanted vegetation which grow in ponds and lakes and hamper its use (Sushilkumar, 2011). Macrophytes of freshwater ecosystems play diverse roles in the structure and functioning of these pristine ecosystems of the world. Macrophytes are important source of food for aquatic life too. Different forms of macrophytes exhibit seasonally variable growth patterns. The aquatic macrophytes are classified as free floating, rooted floating, submerged and emergent hydrophytes based on their features. Proper identification of aquatic weeds is of primary importance for their control. They are classified according to various habitats which form their eco environment

Aquatic weeds are essential parts of natural aquatic systems and form the basis of a water body's health and productivity. Species of macrophytes are of great importance today as far as natural food supply to fish species is concerned. Macrophytes of different water bodies in India are studied by different researchers like Chambhare *et al.* (2008), Chudamani and Siddhi (2004), Deka and Sarma (2014), Murkute and Chavhan (2016), Sharma and Singh (2017), Shende *et al* (2016), Maitreya (2015), Chunne and Nasre (2018), Singh *et al* (2018), Sharma and Dwivedi (2016), Shende *et al* (2016), Sitre (2013), Mahajan and Harney (2018). The freshwater ecosystems of Pombhurna tehsil are

still un investigated till date. So an attempt is made here to study them, with respect to aquatic weeds.

MATERIALS AND METHODS

STUDY AREA

The Satara Bhosale lake and Satara Tukum lakes are most important fresh water bodies of Pombhurna tehsil in Chandrapur district of Maharashtra state in village Satara Bhosale and Satara Tukum. Pombhurna tehsil is located 25 km east side of Chandrapur city from Junona road and 42 km south east side from Ballarshaha. Pombhurna is situated at about 196 mt above the mean sea level and is located at 19°89'54.63' N latitude and 79°62'94.79' E longitude.

Satara Bhosale Lake

Satara Bhosale village is 16 km away from pombhurna tehsil and 27 km away from Chandrapur district. The lake is about 194 mt above mean sea level and is at 19°89'56.63' N latitude and 79°62'98.79' E longitude. Satara Bhosale lake receives the water from the surrounding catchment areas during the monsoon period. The area of Satara Bhosale lake is spread over 36 acres. The water depth of Satara Bhosale is near about 18 feet during the monsoon and 6 feet during the summer season. This lake is perennial in nature.

Satara Tukum Lake

Satara Tukum village is 15 km away from Pombhurna and 25 km away from Chandrapur. The lake is about 194 mt above mean sea level and is at 19°89'54.63' N latitude and 79°62'94.79' E longitude. Satara Tukum lake receives the water from the surrounding catchment areas during the monsoon period. The area of Satara Tukum lake is spread over 34 acres. The water depth of Satara Tukum is 17 feet during the monsoon season and 7 feet during the summer season.

Collection of Macrophytes

Macrophytes in shallow water were collected directly while those from deeper water with the help of long handled hook and local fishermen community. On collection the specimen were thoroughly washed, excess water soaked with filter paper, kept in polythene bags lined with filter paper brought to the laboratory and identified using standard literature (Cook 1996, Sharma 2013).

Table No. 1 : Macrophytes(weeds) recorded in Satara Bhosale Lake.

Sr.No.	Types	Name of the Macrophyte
1	Free floating	<i>Salvinia molesta</i>
2	Free floating	<i>Nymphoidis sp.</i>
3	Submerged floating	<i>Nymphaea sp.</i>
4	Submerged floating	<i>Myriophyllum sp.</i>
5	Submerged floating	<i>Utricularia sp.</i>
6	Submerged floating	<i>Vallisneria spiralis</i>
7	Rooted floating leaved	<i>Nelumbo sp.</i>
8	Rooted floating leaved	<i>Nymphaea sp.</i>
9	Rooted emergent	<i>Sagittaria sp.</i>
10	Rooted submerged	<i>Potamogeton sp.</i>
11	Rooted submerged	<i>Hydrilla sp.</i>

12	Rooted submerged	<i>Ipomoea aquatica</i>
13	Marginal	<i>Ipomea indica</i>

Table No. 2 : Macrophytes recorded in Satara Tukum Lake.

Sr.No.	Types	Name of the Macrophyte(weed)
1	Free floating	<i>Salvinia molesta</i>
2	Free floating	<i>Nymphoidis sp.</i>
3	Submerged floating	<i>Nymphaea sp.</i>
4	Submerged floating	<i>Myriophyllum sp.</i>
5	Submerged floating	<i>Utricularia sp.</i>
6	Submerged floating	<i>Vallisneria spiralis</i>
7	Rooted floating leaved	<i>Nelumbo sp.</i>
8	Rooted floating leaved	<i>Nymphaea sp.</i>
9	Rooted emergent	<i>Sagittaria sp.</i>
10	Rooted submerged	<i>Potamogeton pectinatus</i>
11	Rooted submerged	<i>Hydrilla sp.</i>
12	Rooted submerged	<i>Ipomoea aquatic</i>
13.	Rooted submerged	<i>Ceratophyllum demersum</i>
14.	Submerged floating	<i>Nelumbo nucifera</i>
15.	Marginal	<i>Ipomoea indica</i>

MACROPHYTES



**Nymphaea sp.
aquatica**



Ipomoea indica



Ipomoea



Vallisneria sp.



Hydrilla sp.



Myriophyllum sp.



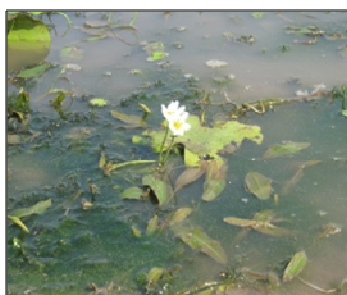
Algal blooms



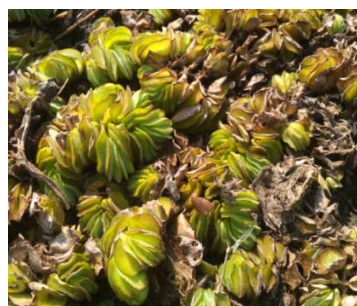
Potamagton pectinatus



Nelumbo nucifera



Nymphoides



Salvinia Molesta

Result and Discussion

The macrophytes of Satara Bhosale and Satara Tukum lakes were observed and presented in Table no 1 and 2. In Satara Bhosale lake 13 weed species were recorded and Satara Tukum lake 15 species were recorded belonging to six different groups viz. free floating, submerged floating, rooted floating, rooted submerged rooted emergent and marginal weeds. Two different kinds of free floating, 4 different kinds of submerged floating, two different kinds of rooted floating, 3 different types of rooted submerged, one type of rooted emergent and one marginal weeds were present in Satara Bhosale lake, total 13 different weeds. In case of Satara Tukum lake, 2 types of free floating, 5 types of submerged floating, 2 types of rooted floating, 1 rooted emergent, 4 rooted submerged and 1 marginal weeds are recorded all together.

In any aquatic ecosystem limnological characteristics can affect both flora and fauna. Biodiversity contribute both directly and indirectly to human welfare. In last decade people interfere with natural ecosystems and over exploitation of natural resources result in biodiversity loss. Today the losses in biodiversity and change in ecosystem service have adversely affected the well being of man. Taking this point in view the present study is undertaken to assess the biodiversity of macrophytes in Satara Bhosale and Satara Tukum lakes. This study throws light on rich biodiversity of Satara Bhosale and Satara Tukum lakes. Now conservation of weeds is needed to sustain the aquatic life and the freshwater ecosystems. Sugunan (1989) stated that aquatic macrophytes figure prominently in the community structure and tropic events of the reservoirs in India and are the factors for ageing of reservoirs and pollution impact. Aquatic weeds are useful when their populations are within limit. They are harmful for fish and fisheries when it crosses the limit. In that condition management is necessary.

The study of submerged and floating vegetation is of great importance today as far as food supply to fish species is concerned. Burlakoti and Karmacharya (2004) observed 61 species, in which Ceratophyllum Submersum and Hydrila sp. observed to be the most dominant species throughout the year supporting our findings. Deka and Sarma (2014) observed 137 macrophytic species belonging to 114 genera and 53 families from the wetlands of the Nalbari district of Assam. Sharma and Singh (2017) studied Emergent weeds in the Himalayan Lake of Dodi Tal. Singh et al (2018) studied the Biomass variation of Ceratophyllum demersum in Poiroupat Lake, Manipur, Northeast India. These studies support our work on biodiversity of weeds which is a unique aspect of biodiversity of the world wetlands.

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